

PRODUCING GENERALIZED JOB INITIATIVE IN SEVERELY MENTALLY RETARDED SHELTERED WORKERS

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The development of generalized job initiative was examined with three severely retarded men working in an industrial assembly area of a sheltered workshop. Interventions included discrimination training, role-play training, and self-monitoring. For each participant, training was applied sequentially to three sets of job initiative behaviors. Intensive training was required to establish the first set of job initiative behaviors; however, the second and third sets of job initiative behaviors were learned with only discrimination training. The discussion summarizes the findings and suggests research needed to develop more powerful learning-to-learn paradigms.

DESCRIPTORS: vocational skills, employment, job initiative, mental retardation, efficiency, learning-to-learn

There is a growing need to prepare mentally retarded individuals for successful entry into competitive employment (Salzberg, Agran, & Lignugaris/Kraft, 1986; Wehman, 1981). Success in competitive jobs, even at the entry level, requires a broad range of skills (Greenspan & Shoultz, 1981; Martin, Rusch, Lagomarcino, & Chadsey-Rusch, 1986; Salzberg, Likins, McConaughy, & Lignugaris/Kraft, 1986). It is clear that efficient methods are needed to teach diverse and complex repertoires such as instruction following or job responsibility. Harlow (1959) suggested that after initial discrimination training, new exemplars are learned with a fewer number of trials. Stokes and Baer (1977) stated that generalization might be claimed when subsequent manipulations are less intensive than the initial intervention. One purpose of our investigation was to determine if, after intensive training to develop a complex vocational skill repertoire, new behaviors could be added to that repertoire with fewer trials and less intensive manipulations.

One complex skill that is characteristic of suc-

cessful workers and composed of a diverse set of behaviors is job initiative (Peckham, 1951-1952). Job initiative may be defined as recognizing that something needs to be done and attending to it even though it is not an explicitly assigned responsibility. Job initiative might be regarded as a skill repertoire with many topographically different behaviors (e.g., putting things away, cleaning up, notifying a supervisor of a problem). For the most part, mentally retarded workers who do not show job initiative have already acquired most of the necessary response topographies (e.g., turning off a dripping faucet). However, the worker's responses may not be under the discriminative control of the appropriate stimuli.

The process for establishing a single job initiative response is fairly straightforward. It simply requires that the response be reinforced in the presence of the intended discriminative stimulus and not be reinforced (or be punished) in the absence of that stimulus. However, the development of a repertoire of job initiative responses is more complex. An individual must first learn to discriminate when something needs to be done; that is, when there is an occasion to show job initiative (e.g., materials out of place). Then, the individual must learn to respond by performing the appropriate response (e.g., putting the materials away). For job initiative, the necessary conditional discriminations and responses are laborious to teach, especially if later

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ones require as much time and effort as earlier ones.

This study had three objectives. The first was to teach job initiative to severely retarded sheltered workers. The second objective was to examine variables that produce generalization of job initiative to novel settings. The third objective was to examine whether new responses could be taught with less intensive training procedures than were required to teach the initial job initiative responses.

METHOD

Participants and Settings

This investigation was conducted at a vocational training agency that provides sheltered and competitive employment placement for handicapped people. Three severely mentally retarded men participated. Al was 27 years old with an IQ score of 37 on the Slosson Intelligence Test. Bob was 36 years old with an IQ score of 37 on the Slosson Intelligence Test. Chris was 27 years old with an IQ score of 32 on the Slosson Intelligence Test. Age equivalent scores on a receptive language test (Carrow-Woolfolk, 1985) were 52–54 months for Al, 43–44 months for Bob, and 50–53 months for Chris.

Training occurred in a storeroom and in production areas (i.e., woodshop, candle and pillow-making rooms). Generalization across settings was assessed in the assembly area.

Target Behaviors and Measurement

Thirteen job initiative situations were developed using a two-step process. First, five local employers were surveyed. These employers indicated that job initiative was important for their workers and also identified general behaviors that exemplify job initiative.

Second, activities in the assembly room were observed by the experimenter and the assembly room supervisor. Specific examples of job initiative that could occur in that work area were developed. These were similar to the job initiative situations identified previously by the employers. Specification of the job initiative situations including the nec-

essary materials, a description of how those materials were placed, procedures for conducting trials, and definitions of correct responses are presented in Table 1.

In a preassessment of job initiative, each participant correctly completed one of the 13 generalization trials. Therefore, that situation was excluded from the investigation for that participant. In addition, Situation 2 became impractical (due to difficulty with the facility's air conditioning system) so it was excluded from the investigation for all participants. The remaining 11 job initiative situations were divided into Sets A, B, and C (see Table 1). Although the job initiative situations in Sets A and B varied across participants, the situations in Set C were held constant.

Observations were conducted in the morning and the afternoon by the experimenter or the supervisor. Situations in the generalization setting were set up before participants arrived to work or while they were away from the assembly area on break or eating lunch. Each observation period included five situations for each participant, of which two were randomly selected from Sets A and B and one from Set C. As many as two observation periods could occur per day, depending on the schedule of the participant, the workshop, and the experimenter.

Experimental Conditions

Verbal praise and tokens exchangeable for money (35¢) were presented contingent upon correct responses to enhance participant motivation in training. The participants received no tokens or other reinforcers for responses in the generalization setting. Training sessions followed each observation period in all conditions and were 5 to 15 min in length.

Baseline condition. Job initiative was assessed each day during the baseline condition. Throughout this condition, training addressed job interview skills rather than job initiative skills.

Discrimination training condition. During this condition, generalization trials continued as in baseline. However, training addressed job initiative skills. There were two phases in the discrimination training condition. In the first phase, participants were

Table 1
Job Initiative Situations

Set-up Criteria		Response	
Materials	Placement	Opportunity	Response
1. Five pieces of trash.	Located within one foot of trash barrel next to supervisor's desk.	Called to desk and waits 10 s while supervisor attends to something else.	Put trash into barrel within 10 s.
2. Water drain pipe and trash can.	Drain pipe is open and trash can is in front of running water.	Instructed to empty trash or put trash can where it belongs.	Shut off water valve before returning to work.
3. Five tools and tool box.	Tools are placed within one foot of tool box located in closet.	Sent to retrieve or return a tool.	Put tools into tool box before returning to work.
4. Part unrelated to assembly task.	Left at worker's station.	Arrives in the morning or returns from break or lunch.	Return part to storage bin within 20 s of returning to work.
5. Three wing nuts and three spur washers.	Scattered on floor by the spare parts barrels.	Instructed to get more parts.	Return displaced parts to barrels before returning to work.
6. One chair.	Left in entranceway to adjacent work area.	Instructed to take an object to adjacent work area.	Move chair out of way before returning to work.
7. One box.	Left in aisle behind worker's chair.	Arrives in morning or returns from break or lunch.	Move box out of way before returning to work.
8. Five wing nuts and plastic washer barrel.	Wing nuts are left in plastic washer barrel.	Instructed to get plastic washers.	Return wing nuts to correct barrel before returning to work.
9. Defective assembly.	Left at worker's station.	Arrives in morning or returns from break or lunch.	Put defective part in barrel within 1 min.
10. Empty box and assembly basket.	Box is placed on corner of assembly basket.	Instructed to put completed assemblies into basket.	Move box out of way before returning to work.
11. Assembly basket.	Is left open at least one inch.	Instructed to put completed assemblies into basket.	Close basket before returning to work.
12. Paper towel dispenser.	Is left empty.	Instructed to wash hands.	Report empty dispenser before drying hands or within 15 s of turning water off.
13. Paper towel and sink.	Paper towel in drain, drain plug lever is up, and water is standing in sink.	Instructed to get or return a smock from box located under sink.	Unstop sink and push drain plug lever down before returning to work.
Job Initiative Situations Used With Each Participant		Set B	Set C
Al	Set A 1, 3, 5, 7	4, 6, 8	10, 11, 12, 13
Bob	1, 3, 4, 5	6, 7, 9	10, 11, 12, 13
Chris	4, 6, 7, 8	3, 5, 9	10, 11, 12, 13

taught the definition and importance of job initiative and were shown 35-mm slides of their Set A job initiative situations. Participants were taught that "Job initiative is: (a) seeing something that needs to be done, and (b) doing it" and that "Job initiative is important because it makes you a better worker." The slides of the Set A job initiative situations were photographs of the materials and their correct placement according to the criteria presented in Table 1. For each slide, the participants were asked, "What needs to be done here to show job initiative?" On the first presentation of each slide, this question was answered immediately by the trainer (e.g., "See the box blocking the aisle? One way to show job initiative is to put the box out of the way or ask your supervisor where it belongs."). On subsequent presentations, participants were allowed 5 s to answer. If they did not answer or answered incorrectly, the trainer pointed to the area of the slide containing the example and said, "look at this area," and then repeated the question (i.e., "What needs to be done here to show job initiative?"). If participants responded incorrectly, the trainer provided the answer. The participant was then asked to repeat the correct answer. The training session ended when the participant independently responded correctly two consecutive times to each of the four Set A slides.

Once the definition and importance of job initiative were recited twice without assistance from the trainer for 2 consecutive days, that procedure was discontinued during discrimination training. In the second phase of discrimination training, the participants were only required to identify job initiative situations on the slides.

Discontinuation of training with Set A situations was based on a two-part, response-dependent criterion. First, participants were required to respond correctly to 75% of the training trials on the first attempt for 2 consecutive days. Second, if responses in the generalization setting indicated that acquisition had occurred, training was discontinued. However, when a low stable level of responding occurred in the generalization setting or when a downward trend in performance of job initiative

responses occurred, a role-play intervention was begun.

Role-play condition. In the role-play training, job initiative situations were set up in the training room and, as the participants responded, they received feedback, correction, and reinforcement. For each situation (e.g., a box in the aisle), the participant was asked, "Do you see anything that needs to be done?" If a participant did not perform the required job initiative response (e.g., move the box out of the aisle) or if he responded incorrectly, he was told to "look at this area" and the question was repeated (i.e., "Do you see anything that needs to be done?"). If the participant still did not perform the appropriate job initiative response, the trainer modeled it. The role-play situation was then repeated. This sequence was repeated until the participant responded correctly. The criterion for discontinuing the role-play intervention was the same as in discrimination training.

Self-monitoring condition. Self-monitoring was implemented for participants who did not demonstrate job initiative in the assembly room after receiving discrimination and role-play training. In training, participants were taught to mark a recording pad whenever they noticed a job initiative situation and each time they performed a job initiative response. Following training, participants were told to use the recording pad in the assembly area. The trainer reviewed the self-monitoring data each day upon completion of generalization trials, and participants were given feedback on their use of the pads. If participants used the pads, they were told, "You saw things that needed to be done and you did them. That's good job initiative." Participants were praised and given tokens exchangeable for money for self-monitoring. Praise and tokens were not contingent on correct job initiative responding or on the accuracy of their self-monitoring.

Experimental Design

A multiple baseline design across participants was used to examine the effect of the teaching procedures on the development of generalized job

initiative responding. For each participant, training was applied sequentially to each job initiative set. After Set A job initiative responses occurred in the generalization setting, discrimination training was initiated with Set B. Similarly, after Set B job initiative responding occurred in the generalization setting, discrimination training began with Set C. During training, new job initiative situations were intermixed with previously trained job initiative situations.

Interobserver Agreement

Interobserver agreement was assessed on the setup of job initiative situations in the generalization setting and on the participants' responses to the situations. For 8% (76) of the job initiative situations presented (992), the assembly area supervisor independently verified that the appropriate materials were selected, that the materials were placed as specified in Table 1, and that the participants had the opportunity to contact the job initiative situation. In addition, the supervisor independently recorded the participants' responses to those trials. Interobserver agreement was calculated by dividing the number of agreements by the number of agreements plus disagreements and multiplying the result by 100. Mean percentage agreement was 100% for selection and placement of materials, 98% (range, 80% to 100%) for response opportunity, and 98.9% (range, 83.3% to 100%) for recording of participants' responses.

RESULTS

In the training sessions, participants required no more than five sessions (range, 2 to 5) to achieve criterion performance in any intervention condition. The number of correct responses in the generalization setting is presented in Figure 1. Each data point in Figure 1 refers to a block of four job initiative situations. Therefore, for Sets A and B, two observation periods were required for each data point, whereas for Set C, four observation periods were required.

During baseline, job initiative was at or near zero

for all participants. Discrimination, role-play, and self-monitoring training of the Set A situations produced no increase in job initiative responses in the assembly area for Al. After self-monitoring was taught in the assembly area during breaks, correct responses occurred in two of four Set A situations in the generalization setting. Because Al was still not consistently demonstrating job initiative, the supervisor prompted job initiative in the generalization setting. That is, immediately following an opportunity to show initiative, the supervisor would say to Al, "Remember to show job initiative. What are you going to show?" This was repeated until Al said, "Job initiative." This condition was faded by having the supervisor stand near Al without prompting during test situations. Later in this condition, no prompts were provided and the supervisor no longer stood close to Al during generalization trials. Only after the supervisor began prompting in the assembly area did Al demonstrate job initiative on all Set A trials. When supervisor prompts were faded, job initiative remained at a high level. There was no change in the occurrence of Set B or Set C responses, even when Set A job initiative responses occurred at a high rate. However, after discrimination training began with Set B and later with Set C situations, Al began to perform generalized job initiative with these situations as well.

For Bob, initial discrimination training had little effect on Set A job initiative responses in the generalization setting. Role-play training established job initiative with two responses and self-monitoring training increased job initiative in the generalization setting to three of four responses. However, the establishment of generalized Set A job initiative responses, by itself, did not alter the low, steady rate of job initiative responding with Sets B or C. As with Al, discrimination training, by itself, resulted in improved job initiative responding in the generalization setting with Sets B and C.

Unlike the other two participants, initial discrimination training resulted in some job initiative responses for Chris on Set A job initiative situations in the generalization setting. Role-play training sub-

NUMBER OF SITUATIONS IN WHICH JOB INITIATIVE OCCURRED IN THE GENERALIZATION SETTING

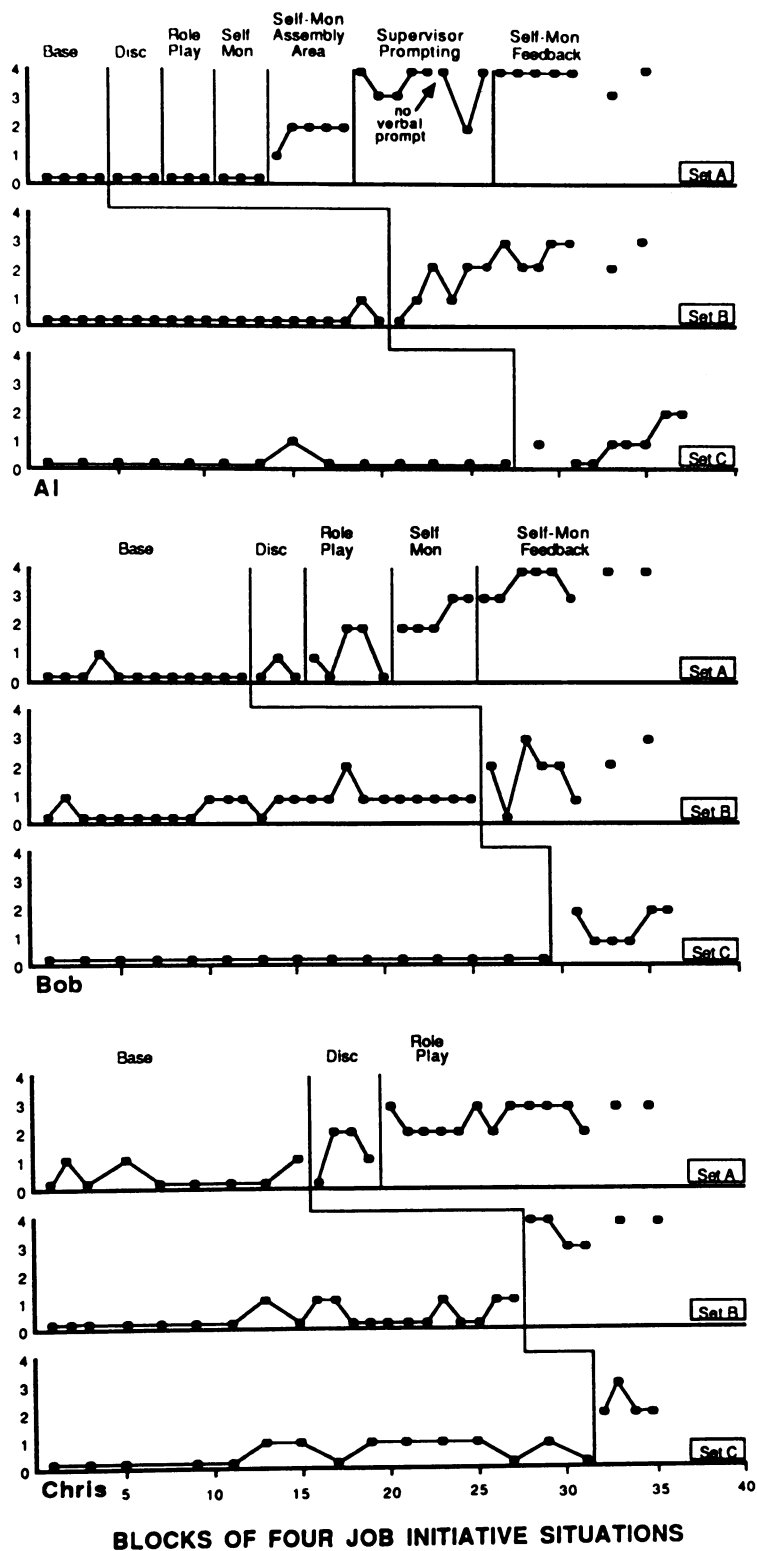


Figure 1. Multiple baseline design illustrating the number of situations in which job initiative occurred in the generalization setting.

sequently increased job initiative responding in the generalization setting to three of four responses. As with Al and Bob, establishing job initiative responses for Set A had no immediate effect on Set B and Set C responses. Discrimination training alone produced generalized job initiative with Set B and Set C responses after job initiative was established with Set A responses.

DISCUSSION

Prior to intervention, job initiative was at or near zero for all participants. Job initiative responses were quickly acquired by all participants in the training setting. More important, although intensive training was required to establish an initial set of generalized job initiative responses, subsequent sets of job initiative responses were rapidly learned with only discrimination training. Therefore, subjects may be said to have learned how-to-learn job initiative responses more efficiently as training progressed (Harlow, 1959). It is not clear, however, whether these participants would now also learn other repertoires more easily. For example, it is not certain that participants who may have had previous difficulty learning a different set of skills, such as responding appropriately to criticism, would now acquire that repertoire with only discrimination training. Future research should attempt to identify procedures that produce a generalized learning-to-learn repertoire across a wide range of behaviors.

Although the procedures used in this experiment proved to be efficient, it is not clear if a stimulus class developed within each type of job initiative situation. For example, it is not known whether a participant will put trash into a box after being trained to show initiative by putting trash into a trash barrel. Similarly, because participants did not respond to new job initiative situations without some additional training, it is not clear that a job initiative response class developed for any of the participants. Future research should address the development of stimulus and response classes with complex repertoires such as job initiative.

The lack of follow-up data is a limitation in this investigation. Because of a temporary layoff in the

assembly area, the investigation had to be discontinued. It would have been interesting to examine the long-term effects of the training or, alternatively, the maintenance procedures that would obtain lasting effects (Sciba & Casey, 1985).

In summary, it seems that handicapped individuals can become more efficient learners. The discrimination training procedure that produced generalization of job initiative responses to the assembly area required only a fraction of the time and effort that were required to produce generalization with the first set of responses. Moreover, individuals who can learn from verbal instruction supplemented by pictures can be taught a broad range of skills that would be otherwise impossible to address because it would be dangerous, inconvenient, or physically impossible to set up the actual situations (e.g., cultivating a garden plot). Perhaps the procedures used to promote generalized job initiative in this study will prove, with systematic replication, to be applicable to other employment-related skill repertoires. If so, it may be possible to develop a teaching technology that will help handicapped individuals enter the labor force more easily and develop more successful careers.

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